Bathtub Refinisher Deaths from Methylene Chloride (MC)*

(*also known as Dichloromethane)

MC-based paint strippers are an EXTREME hazard

Thirteen bathtub refinishers from ten states have died (2000 - 2011) after inhaling toxic methylene chloride while stripping residential tubs[1]. Ten different products, containing 60 to 100% MC, were associated with the deaths. Products included Klean-Strip Premium Stripper and Tal-Strip II Aircraft Coating Remover[1]. In each case, ventilation and respiratory protection were absent or inadequate[2].

Stripping with MC can have deadly consequences because:

MC vapor is absorbed quickly by the lungs at low concentrations that you cannot smell.
MC vapor is heavier than air. Vapor can sink and remain low in the bathtub and breathing area during stripping.
Bathrooms are difficult to ventilate *effectively*. Standard ceiling bathroom fans cannot remove MC vapor from low inside the bathtub where you are breathing. Ventilation is needed to both suck contaminated air out of the bathtub and to push fresh air into the space. Small bathrooms with limited windows are difficult to ventilate without air turbulence.
Filter and respirator cartridges don't protect you from MC vapor. Instead, you need a full-face supplied air respirator.

DO NOT use MC-based strippers on bathtubs

There are safer alternatives to MC-based strippers.

Alternative paint strippers formulated with benzyl alcohol are less toxic than MC-based strippers and may work best[3,4].

All paint strippers have hazards, even those marketed as "green". Alternative formulations may contain N-methylpyrrolidone (NMP), a reproductive hazard, which should be avoided.

Read and follow the Material Safety Data Sheet (MSDS). Follow a comprehensive safety program for all chemicals used, incorporating ventilation and a respiratory protection program. **Washington employers can call the SHARP Program for help finding alternative strippers (1-888-66-SHARP).**

If you continue to use MC-based strippers

Small businesses who use MC should get help. Because it is a carcinogen, MC has an extensive safety standard (WAC 296-62-07470 "Methylene Chloride") that users must follow. The rule requires:

- air monitoring for MC (possibly *routine*)
- effective ventilation
- employer-paid doctor visits (possibly *routine*) for medical assessment of exposed employees
- protective clothing
- a respiratory protection program

To use MC-based strippers you need:
Ventilation that both pulls MC vapor out of the <u>*bathtub*</u> as you apply it and pushes fresh air towards the bathtub.
A full-face supplied air respirator. Half-face respirators DO NOT protect the eyes and cannot be used with MC. Cartridge respirators DO NOT protect because MC goes through the filter.
Polyvinyl alcohol (PVC) or Silver Shield 4H® gloves. Latex, nitrile, neoprene, polyetheylene and butyl rubber gloves DO NOT protect you. Protective coveralls include Tychem® models BR/LV, TK, Responder, and Trellchemn® HPS.

<u>*Choosing a paint stripper that is free of MC would lessen some of the above burdens and associated costs*</u>

Get Help from WA State Department of Labor & Industries: For free assistance call the SHARP Program, 1-888-66-SHARP or L&I's Division of Occupational Safety and Health (DOSH) Consultation 1-800-423-7233

**This bulletin was developed by the Safety and Health Assessment and Research for Prevention (SHARP) Program, 1-888-667-4277.*

[1]Centers for Disease Control and Prevention, Fatal Exposure to Methylene Chloride Amoung Bathtub Refinishers – United States, 2000-2011. MMWR 2012; 61(7): pp119-122. Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6107a2.htm?s_cid=mm6107a2_w. Accessed March 21, 2012.
[2]Michigan Fatality Assessment and Control Evaluation. Methylene Chloride Causes Death of 3 MI Bathtub Refinishers. HA #14. Available at http://www.oem.msu.edu/userfiles/BathtubRefinishingHA14.pdf. Accessed March 21, 2012.
[3]California Department of Public Health. Occupational Health Hazard Alert: Methylene Chloride in Paint Strippers and Bathtub Refinishing. Available at: http://www.cdph.ca.gov/programs/hesis/Documents/MethyleneChlorideAlert.pdf. Accessed March 21, 2012.
[4]Institute for Research and Technical Assistance. Methylene Chloride Consumer Product Paint Strippers: Low-VOC, Low Toxicity Alternatives, May 2006. Available at http://www.irta.us. Accessed March 21, 2012.

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